

A Key to World Species of Scolebythidae (Hymenoptera: Chryridoidea), with Description of a New Species of *Dominibythus* from Brazil

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Abstract.—*Dominibythus strictus* sp. n. from Brazil, the first extant species of the genus, is described and illustrated. Additional specimens of the rarely collected *Clystopenella longiventris* Kieffer 1911 are examined and the species variation analyzed. A world key to the fossil and extant species of Scolebythidae is given.

Scolebythidae is a family of Aculeata with five monotypic genera. Evans (1963) proposed this family based on *Clystopenella* Kieffer 1911, from Brazil, a genus transferred from the Bethyliidae, and on *Scolebythus* Evans 1963, from Madagascar. Nagy (1975) added the third genus, *Ycaploca*, from South Africa and Australia describing the first male of Scolebythidae. Day (1977) described and illustrated the male genitalia of *Clystopenella*. Evans et al. (1979) reanalyzed *Scolebythus* with description of the male and sting apparatus.

All extant species are exclusive austral, but Prentice et al. (1996) described two fossil genera, *Libanobythus* and *Dominibythus*, from Lebanese and Dominican amber.

Biological data on the species suggest that the species of Scolebythidae are possibly gregarious ectoparasitoids of wood-boring beetle larvae (Evans 1963, Nagy 1975, Day 1977, Evans et al. 1979), but Gauld (1995) pointed out that all published information is questionable.

In this paper, *Dominibythus strictus* sp. n. from Brazil is described and illustrated,

and new taxonomic data are provided for *Clystopenella longiventris* Kieffer 1911. A world key to the fossil and extant species of this family is given.

The examined material used in the present paper was provided by Canadian National Collection of Insects, Canada (CNCI, J. T. Huber); Universidade Federal do Paraná, Brazil (DZPR, K. Zanol); and Instituto Brasileiro de Geografia e Estatística, Brasília, Brazil (IBGE, B. Dias).

Abbreviations for the main measurements used in this study are as follow: LH, length of head; WH, width of head; WF, width of frons; HE, height of eye; OOL, ocello-ocular line; WOT, width of the ocellar triangle, including the ocelli; DAO, diameter of anterior cellus; VOL, vertex-ocular line; LFW, length of forewing.

The nomenclature of the integument follows Eady (1968) for the term coriaceous and Harris (1979) for the other textures. Terminology generally follows Evans (1963), and the terminology of wing cells and veins follows Gauld and Bolton (1988).

KEY TO FOSSIL AND EXTANT SPECIES OF WORLD SCOLEBYTHIDAE

1. Mesoscutum with notaulus absent or at least incomplete; prosternum large, its width at least $2.5 \times$ length of propleuron; forewing with three closed cells, Rs vein shorter than stigma (*Dominibythus*) 2

- Mesoscutum with complete notaulus; prosternum smaller than above, its width at most 2 × length of propleuron; forewing with five or six closed cells, Rs vein much longer than stigma 3
- 2. Frons with an arched prominence; eye forming the widest part of head; notaulus present anteriorly; occipital carina present dorsally; width of prosternum 2.5 × length of propleuron; Cu vein nebulous *Dominibythus inopinatus* Prentice and Poinar
- Frons without prominence; gena forming the widest part of head; notaulus absent; occipital carina absent dorsally; width of prosternum 2.8 × length of propleuron; Cu vein as a short stub *Dominibythus strictus* Azevedo, new species
- 3. Pronotal disc enlarged, 1.57 × longer than mesoscutum; parapsidal furrows absent; forewing without metacarpus, with five closed cells, marginal cell opened; tibial spur formula 1,1,1 *Lybanobythus milkii* Prentice & Poinar
- Pronotal disc shorter than mesoscutum, about 0.6–0.7 × longer than mesoscutum; parapsidal furrows present; forewing with metacarpus, with six closed cells, marginal cell closed; tibial spur formula 1,2,2 4
- 4. Frons with a median prominence between antennal sockets; malar space virtually nonexistent; forewing with submarginal cell longer than marginal, extending beyond the basal half of marginal cell *Ycaploca evansi* Nagy
- Frons without median prominence between antennal sockets; malar space short; forewing with submarginal cell slightly shorter than marginal, not extending beyond the basal half of marginal cell 5
- 5. Occipital carina absent; malar space well over half as long as basal width of mandible; apex of marginal cell arched away from anterior margin of forewing; posterior area of metasomal sternite V with two groups of appressed and dense setae *Clystospennella longiventris* Kieffer
- Occipital carina present; malar space short, less than half as long as basal width of mandible; apex of marginal cell on anterior margin of forewing; posterior area of metasomal sternite V without special groups of setae *Scolebythus madecassus* Evans

Dominibythus strictus Azevedo,
new species
(Figs. 1–7)

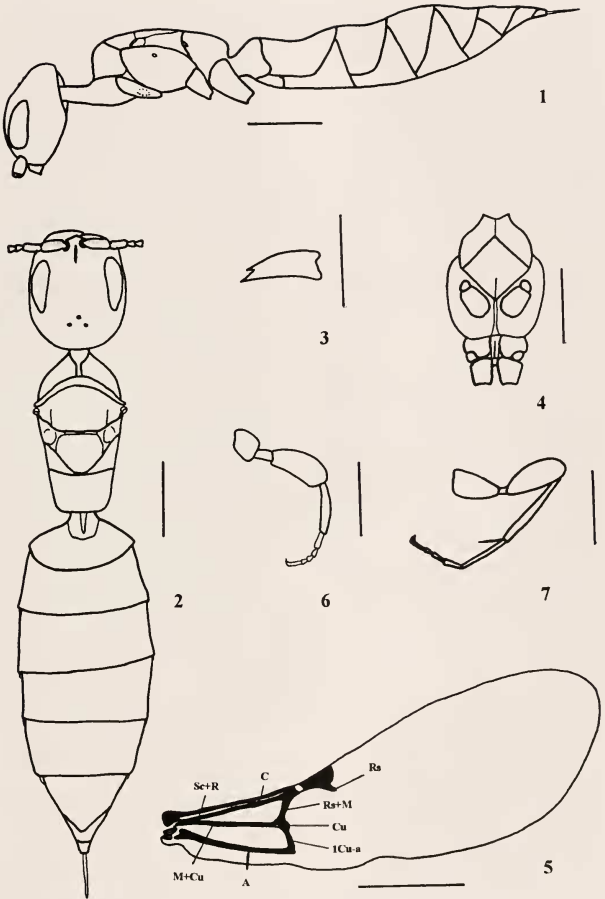
Description of female holotype: length of body 3.93 mm; LFW 2.25 mm.

Color: body castaneous, head and mesosoma slightly darker; vertex with two lighter streaks starting on the crest and extending between the ocellar triangle and eye; malar space, antenna, midtibia and tarsi slightly lighter than head; wings hyaline, veins castaneous.

Pubescence: very sparse and long overall; setae short and dense on antenna, some erect; setae noticeably longer on hindtibia; nearly absent at dorsum of gastral tergites, and concentrated at posterior half in gastral sternites.

Head (Figs. 1–2): mandible wholly directed downward slightly, with two sharp

apical teeth (Fig. 3), and with a shallow suture below upper tooth. Clypeus extremely short, median lobe angulate, without median carina. Antenna short, nearly reaching the pronotum; first four antennal segments in a ratio of about 7:4:1:2, flagellomere IX 1.2 × as long as thick, sensillae circular. Head slightly narrower below. Antennal sockets separated by less than their own diameters. Frons weakly coriaceous, with a very small number of small and shallow punctures; frontal carina low and short. Malar space broad, 1.0 × the basal width of mandible. LH 1.27 × WH; WF 0.5 × WH; WF 0.85 × HE; ocellar triangle very compact, OOL 1.45 × WOT and situated on an imaginary line between eye tops, its frontal angle obtuse; posterior ocelli distant from vertex crest by 2.94 × DAO. Eye subtriangular, with rounded corners; gena forming widest part of head.



Figs. 1-7. *Dominibythus strictus*. 1. Body, lateral. 2. Body, dorsal. 3. Mandible, frontal. 4. Mesosoma, ventral. 5. Forewing. 6. Foreleg, lateral. 7. Hindleg, lateral. Scale bars = 0.5 mm.

Vertex rounded, VOL $0.73 \times$ HE; sides of head straight and subparallel and slightly convergent below. Occipital carina weak, present only ventrally. Palpal formula 6:4, segment I-III of labial palpi and segments I-IV of maxillary palpi flattened.

Mesosoma (Figs. 1-2, 4): thorax weakly coriaceous. Pronotal disc very short, $0.4 \times$ length of mesoscutum; anterior margin of pronotum evenly convex in dorsal view. Mesoscutum without notauli; parapsidal furrows well-impressed, absent on the anterior half of mesoscutum, paralleled by an outer carina. Scutellum long, only slightly shorter than mesoscutum, prescutellar sulcus narrow posterad laterally, crossing entire anterior margin. Metanotum very narrow medially. Propodeal disc $0.56 \times$ as long as wide; anterior margin of propodeum with a transverse carina, posterior half of median propodeal line with a shallow groove; spiracle laterad, declivity without carinae. Propleuron very large, produced strongly forward. Prosternum very long, its width $2.8 \times$ the length of propleuron, and $3 \times$ longer than forefemur. Mesopleuron with a scrobal pit above midheight. Mesosterna separated by a wide longitudinal groove. Metasternum narrow, separating the base of midcoxa. Legs without spines. Forewing (Fig. 5) with only costal, basal and first discal cells, stigma wide, $0.63 \times$ as long as wide; Rs vein very short, $0.37 \times$ the length of stigma; 1cu-a vein nearly vertical; Rs+M vein reaching Sc+R vein far from stigma; Cu vein as a very short stub. Hindwing with anal lobe distinct. Forefemur $3 \times$ as long as thick (Fig. 6). Hindtibia longer than hindfemur. Hindcoxae closely set. Basitarsus of hindleg very long, longer than half length of hindtibia and longer than remaining tarsomeres together (Fig. 7). Tibial spur formula 1:1:1. Claws simple and arched, dilated basally.

Metasoma (Figs. 1-2): coriaceous, wider than both mesosoma and head. Tergite VII with anterior margin deeply concavous. Gonostylus $0.28 \times$ the length of sting.

Sting and lancets without teeth; bulbous little dilated; sting 0.63 mm long.

Material examined: 1 female holotype BRAZIL, Distrito Federal, Brasília, Roncador Ecological Station, shrub savanna; 12.ix.1979-21.x.1982; window trap; J. Dalmaço col. (IBGE). Paratypes, 17 females BRAZIL, 16 females Distrito Federal, same data as holotype except places savanna grassland, shrub savanna, and swamp, and data 12.ix.1979-21.x.1982 (IBGE); 1 female Rio de Janeiro, Rio de Janeiro, Corcovado; i.1960; Seabra & Alvarenga col. (DZPR).

Variation: body wholly dark castaneous, clypeus distinctly lighter than head; specimen from Rio de Janeiro with clypeus projecting with a distinctly wider median lobe; WH $1.17-1.20 \times$ LH; WF $0.45-0.55 \times$ WH; WF $0.85-0.96 \times$ HE; OOL $1.2-1.44 \times$ WOT; posterior ocelli distant from the vertex crest $2.78-3.52 \times$ DAO; VOL $0.68-0.8 \times$ HE; parapsidal furrows not paralleled by outer carina.

Remarks: *Dominibythus* was first described from a fossil of Late Eocene to Late Oligocene Dominican amber (Prentice et al. 1990). *Dominibythus strictus* sp. n. is the first living species of the genus. It may be identified as *Dominibythus* by the 3 closed cells of the forewing. *Dominibythus strictus* differs from *D. inopinatus* by the absence of a frontal prominence, absence of occipital carina dorsally and notauli, and presence of a tubular apical abscissa of the Cu vein, although extremely short, as a stub, while Cu vein in *D. inopinatus* is entire nebulous. The color pattern of the male space and the lighter streaks on the vertex of *D. strictus* resembles that of *Clystopenella longiventris*.

Etymology: The name refers to the short Rs vein of the forewing.

Clystopenella longiventris Kieffer

This species is first recorded for Bahia and Minas Gerais. The specimens are about 8 mm long and the light color streaks on the vertex are very weak or nearly absent;

mandible and malar space distinctly lighter than head, legs lighter than mesosoma; WH 1.06–1.10 × LH; WF 0.61–0.65 × WH; WF 1.10–1.29 × HE; OOL 0.85–0.86 × WOT; posterior ocelli distant from the vertex crest 4.0–5.4 × DAO; VOL 0.54–0.61 × HE; pronotal disc about 0.51 × the mesoscutum length; notauli and parapsidal furrows complete or nearly so; propodeal disc about 0.5 × as long as wide.

New material examined: 8 females BRAZIL, 1 female, Bahia, Encruzilhada; xi.1974; M. Alvarenga col. (CNCI); 4 females Minas Gerais, Pedra Azul; xi.1974; M. Alvarenga col. (CNCI); 2 females Distrito Federal, Brasília, Roncador Ecological Station, shrub savanna; 23.i.1982 and 7.iv.1983; window trap; J. Dalmáceo col. (IBGE); 1 female São Paulo, Mogi-guaçu, Campiminas Farm; 3.i.1970; J. M. & G. R. Campbell col. (CNCI).

Distribution: Brazil (Bahia, Minas Gerais, Distrito Federal, São Paulo, Mato Grosso de Sul, Santa Catarina). Gauld (1995) commented that there are a few undescribed species of *Clystopenella* in museum collections from Neotropics and Australia, and one or, possibly two species in Costa Rica.

ACKNOWLEDGMENTS

I wish to thank E. R. Bortolini (UFES) and C. R. F. Brandão (MZSP) for the loan of the camera lucida,

and to curators cited in the text for the loan of the material studied here.

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